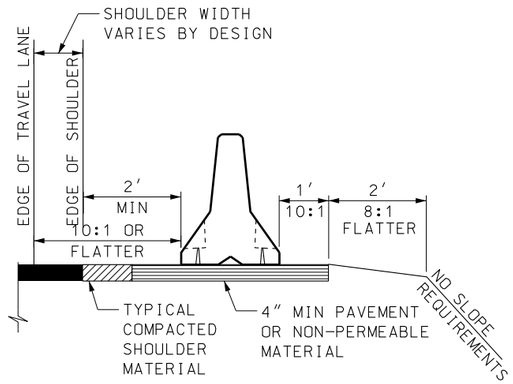
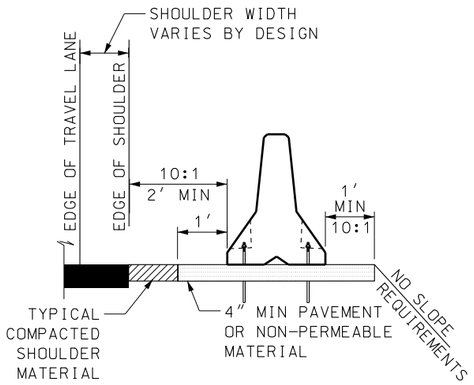


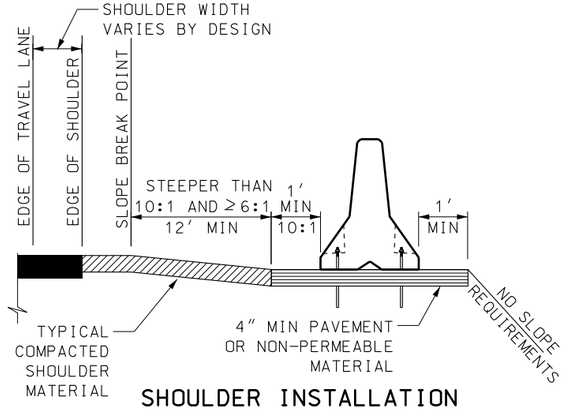
SHOULDER INSTALLATION OPTION 1

NO STABILIZATION PINS REQUIRED



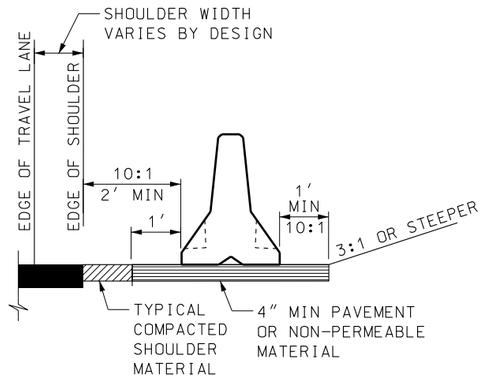
SHOULDER INSTALLATION OPTION 2

STABILIZATION PINS REQUIRED



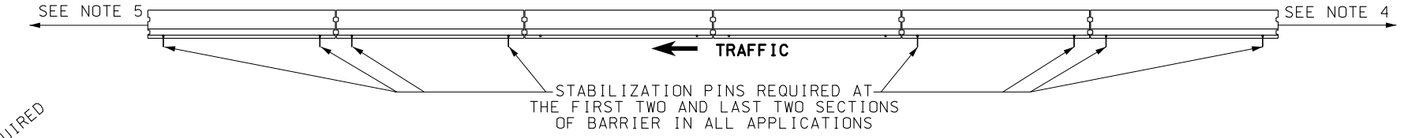
SHOULDER INSTALLATION OPTION 3

STABILIZATION PINS REQUIRED



SHOULDER INSTALLATION WITH 3:1 OR STEEPER BACKSLOPE

NO STABILIZATION PINS REQUIRED



FORMULAS FOR LENGTH OF NEED CALCULATIONS BURIED IN TERMINAL SECTION ONLY

BACKSLOPE STEEPER THAN 3:1

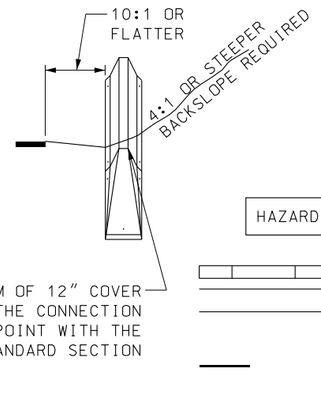
LON= FLR x D1

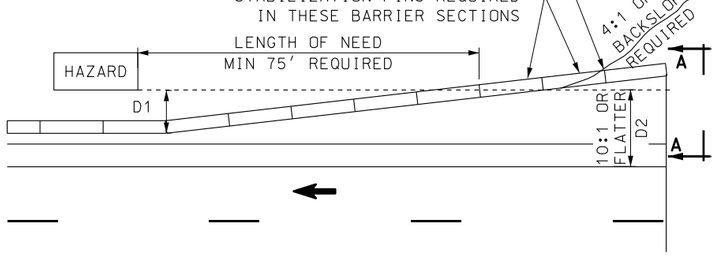
BACKSLOPE 3:1 TO A MINIMUM 4:1

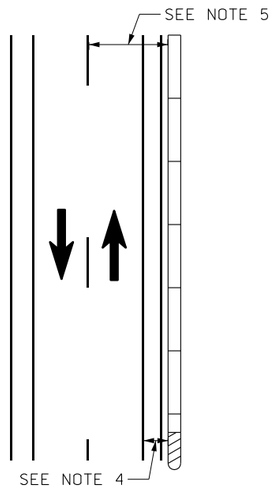
≥ 50 MPH "LON"= 450 - (15 x D2)
≤ 45 MPH "LON"= 250 - (15 x D2)

LON: LENGTH OF NEED
FLR: BARRIER FLARE RATE
D1: DISTANCE FROM FACE OF BARRIER TO FACE OF HAZARD OR DITCH BOTTOM
D2: DISTANCE FROM EDGE OF TRAVEL LANE TO FACE OF HAZARD OR DITCH BOTTOM

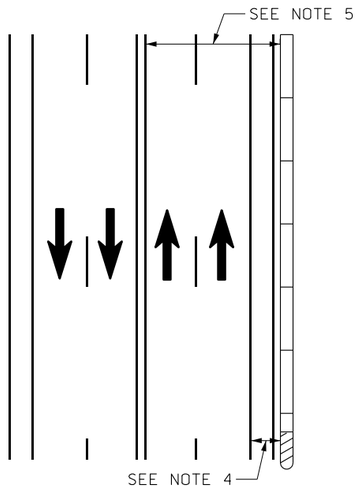
SECTION A-A



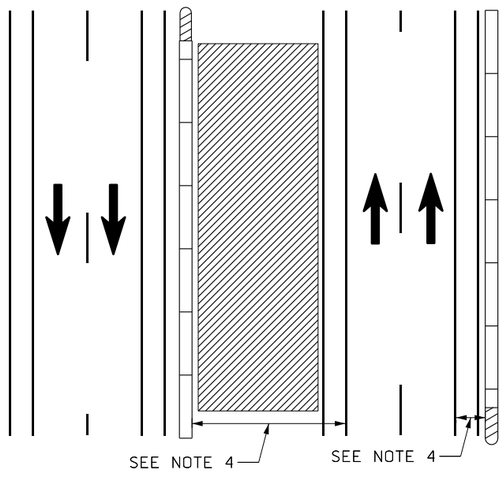




TWO LANE/TWO WAY



MULTI-LANE ARTERIAL



MULTI-LANE ARTERIAL WITH TRAVERSABLE MEDIAN

NOTES:

1. USE REQUIRED CLEAR ZONE FROM THE ROADSIDE DESIGN GUIDE, CURRENT EDITION. USE APPROPRIATE FLARE RATE AS SUGGESTED IN ROADSIDE GUIDE, CURRENT EDITION, FOR RIGID BARRIER SYSTEMS, WHEN BARRIER IS PLACED WITH A FLARE.

2. PLACE BARRIER ON A 4″ PAVED OR NON-PERMEABLE SURFACE.

3. PIN ALL BARRIER SECTIONS TOGETHER AT CONNECTION LOOPS.

4. INSTALL APPROPRIATE END TREATMENT OR CRASH CUSHION WHEN BARRIER ENDS ARE WITHIN 1.2 TIMES THE REQUIRED REQUIRED MINIMUM AASHTO CLEAR ZONE AND THE DESIGN SPEED IS GREATER THAN 40 MPH.
   A. TERMINAL SECTION (STD DWG BA 1C) PERMITTED ON APPROACH ENDS WHEN DESIGN SPEED FOR ROADWAY IS 40 MPH OR LESS.
   B. INSTALL TERMINAL SECTION (STD DWG BA 1C) WHEN BARRIER ENDS EXPOSED TO APPROACH TRAFFIC IS 1.2 TIMES OR GREATER THAN THE REQUIRED MINIMUM AASHTO CLEAR ZONE AND SPEEDS EXCEED 40 MPH. TERMINAL SECTION (STD DWG BA 1C) REQUIRED ON TRAILING END OF BARRIER ON DIVIDED ROADWAYS. USE OF TERMINAL SECTION (BA 1C) ON TRAILING ENDS ON NON-DIVIDED ROADWAYS WHEN AN END TREATMENT OR CRASH CUSHION NOT REQUIRED.
   C. CHOOSE APPROPRIATE END TREATMENT OR CRASH CUSHION TYPE USING STD DWG CC SERIES AND CURRENT EDITION OF GUIDELINES FOR CRASH CUSHIONS AND END TREATMENTS

5. THE CONCRETE BARRIER DESIGN ALLOWS FOR A 3′ OUTWARD LATERAL MOVEMENT IF THE BARRIER IS STRUCK. STABILIZATION PINS ARE NOT REQUIRED WHEN USED ON A SHOULDER APPLICATION AND THE REQUIRED SLOPE OF 8:1 OR FLATTER EXIST 3′ BEHIND THE BARRIER. USE STABILIZATION PINS WHEN THE SLOPES ARE STEEPER THAN 8:1 AND WITHIN 3′ OF THE BARRIER BACKSIDE.

6. PRE-DRILL A 1″ HOLE THROUGH THE PAVED SURFACE PRIOR TO INSTALLING THE STABILIZATION PIN.

7. DO NOT PLACE BARRIER ON TOP OF ANY CURBING.

8. DO NOT OVERLAY ANY MATERIAL PAST THE FIRST BREAK POINT ON THE BARRIER. THE FIRST BREAK POINT IS 3″ FROM THE BOTTOM OF THE BARRIER.

9. PLACE AN ADEQUATE AMOUNT OF SILICON ADHESIVE ON THE BOTTOM WASHER OF THE CONNECTION PIN BEFORE INSERTING, TO HOLD IN PLACE AND PREVENT EASY HAND REMOVAL.

REVISIONS

NO.	DATE	APPR.	REMARKS

UTAH DEPARTMENT OF TRANSPORTATION
STANDARD DRAWINGS FOR ROAD AND BRIDGE CONSTRUCTION
SALT LAKE CITY, UTAH

RECOMMENDED FOR APPROVAL — JAN.01.2008 DATE
CHAIRMAN STANDARDS COMMITTEE
APPROVED — JAN.01.2008 DATE
DEPUTY DIRECTOR

PRECAST CONCRETE FULL SECTION SHOULDER APPLICATIONS (NEW JERSEY SHAPE)
STANDARD DRAWING TITLE

STD DWG
BA 1E

DGN File:L:\Standard Drawings\Imperial\2008Approved\Barriers (BA)\BA08IE.dgn
18-DEC-2007